AMENDMENT AND RESPONSE UNDER 37 CFR § 1.111

Serial Number: 09/834,095 Filing Date: April 12, 2001

Title: VIRUSES COMPRISING MUTANT ION CHANNEL PROTEIN

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selected from a vector comprising a promoter operably linked to an influenza virus PA cDNA linked to a transcription termination sequence, a vector comprising a promoter operably linked to an influenza virus PB1 cDNA linked to a transcription termination sequence, a vector comprising a promoter operably linked to an influenza virus PB2 cDNA linked to a transcription termination sequence, a vector comprising a promoter operably linked to an influenza virus HA cDNA linked to a transcription termination sequence, a vector comprising promoter operably linked to an influenza virus NP cDNA linked to a transcription termination sequence, a vector comprising a promoter operably linked to an influenza virus NA cDNA linked to a transcription termination sequence, a vector comprising a promoter operably linked to an influenza virus M cDNA linked to a transcription termination sequence, and a vector comprising a promoter operably linked to an influenza virus NS cDNA linked to a transcription termination sequence, wherein the M cDNA comprises mutant ion channel protein DNA comprising a mutation in the transmembrane domain which mutation does not alter the in vitro replication of the virus but is associated with attenuation of the virus in vivo; and b) at least two vectors selected from a vector comprising a promoter operably linked to a DNA segment encoding influenza virus PA, a vector comprising a promoter operably linked to a DNA segment encoding influenza virus PB1, a vector comprising a promoter operably linked to a DNA segment encoding influenza virus PB2, a vector comprising a promoter operably linked to a DNA segment encoding influenza virus NP, a vector comprising a promoter operably linked to a DNA segment encoding influenza virus HA, a vector comprising a promoter operably linked to a DNA segment encoding influenza virus NA, a vector comprising a promoter operably linked to a DNA segment encoding influenza virus M1, a vector comprising a promoter operably linked to a DNA segment encoding an ion channel protein, and a vector comprising a promoter operably linked to a DNA segment encoding influenza virus NS2 [the method of claim 11].

Please add the following new claims:



the N-terminal and C-terminal portion of an influenza virus ion channel protein and the transmembrane domain of a heterologous protein.

- 28. (New) The isolated and purified virus of claim 27 wherein the chimeric protein comprises an influenza virus ion channel protein and the transmembrane domain of a hemagglutinin or neuraminidase protein.
- 29. (New) The isolated and purified virus of claim 3 wherein the substitution is at a residue corresponding to residue 27, 30, 31, 34, 38 or 41 of the transmembrane domain of M2.
- 30. (New) The isolated and purified virus of claim 29 wherein the substitution is a threonine for valine at residue 27, a proline for alanine at residue 30, an asparagine for serine at residue 31, or an alanine for tryptophan at residue 41.
- 31. (New) The isolated and purified virus of claim 5 wherein the deletion includes residues corresponding to residues 29 to 31 of the transmembrane domain of M2.

Remarks

Reconsideration and withdrawal of the rejections of the claims, in view of the amendments and remarks herein, is respectfully requested. Claims 1, 2, 4 and 25 are amended, and claims 27-31 are added; as a result, claims 1-31 are now pending. The amendments are intended to further prosecution and are not intended to concede to the correctness of the Examiner's position or to prejudice the prosecution of the claims prior to amendment, which claims are present in a continuation of the present application.

Amended claim 1 is supported by Examples 2-3.

Amended claim 2 is supported by originally-filed claim 2.

Amended claim 4 is supported by originally-filed claims 1 and 4.

Amended claim 25 is supported by originally-filed claims 11 and 25.

New claims 27-31 are supported by Examples 2-3.